

What is claimed is:

1. A dissociating apparatus of a papermaking raw material, comprising:

5 a rotary drum rotatably and laterally arranged for receiving the papermaking raw material therein and having engaging portions formed on an inner surface thereof, said engaging portions engaging the papermaking raw material to carry the papermaking raw material from a bottom side to an upper side inside the rotary drum upon rotation of the rotary drum, and

10 a rotary vane rotatably situated inside the rotary drum to extend along the rotary drum, said rotary vane hitting the papermaking raw material falling from the engaging portions upon rotation of the rotary drum.

15 2. A dissociating apparatus of a papermaking raw material according to claim 1, wherein said rotary drum has a receiving portion at one end thereof for receiving the papermaking raw material, and a discharging portion formed in a side surface of the first rotary drum at a side opposite to the one end of the rotary drum and having a plurality of first openings for
20 discharging the papermaking raw material from the rotary drum.

3. A dissociating apparatus of a papermaking raw material according to claim 2, wherein said rotary drum is formed of an
25 elongated body having a diameter smaller than a distance between the receiving portion and the discharging portion, said rotary drum being disposed such that a longitudinal direction of the elongated body is aligned in a horizontal direction and the discharging portion is located lower than the receiving portion.

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4. A dissociating apparatus of a papermaking raw material according to claim 2, further comprising an agitator for agitating the papermaking raw material with water before the papermaking raw material is received in the rotary drum, and a
5 transferring device for transferring the papermaking raw material from the agitator to the receiving portion of the rotary drum.

5. A dissociating apparatus of a papermaking raw material according to claim 4, wherein said engaging portions include
10 feeding blades for feeding the papermaking raw material from the receiving portion to the discharging portion.

6. A dissociating apparatus of a papermaking raw material according to claim 2, further comprising a water supplying device
15 disposed at the discharging portion inside the rotary drum for supplying water to the papermaking raw material.

7. A dissociating apparatus of a papermaking raw material according to claim 6, wherein said rotary drum further includes a
20 projecting portion projecting outwardly and located between the rotary vane and the discharging portion, said water supplying device being disposed in the projecting portion.

8. A dissociating apparatus of a papermaking raw material
25 according to claim 2, further comprising a screening device for receiving the papermaking raw material discharged from the discharging portion, said screening device having an agitating member for agitating the papermaking raw material and a screen having a plurality of second openings for discharging the

papermaking raw material therethrough, said second openings having sizes smaller than those of the first openings.

5 9. A dissociating apparatus of a papermaking raw material according to claim 8, further comprising another rotary drum having a plurality of third openings in a sidewall thereof for separating a foreign material from the papermaking raw material remaining in the screening device, said third openings having sizes smaller than those of the first openings and larger than
10 those of the second openings so that the papermaking raw material passing through the third openings is guided to the screening device.

15 10. A dissociating apparatus of a papermaking raw material according to claim 2, further comprising a side surface covering member formed at a side closer to the receiving portion of the first rotary drum than the discharging portion thereof for covering the side surface of the rotary drum, said side surface covering member having a closed portion at a side opposite to the
20 one end and an open portion at a side of the one end, said side surface covering member including a plurality of openings having sizes smaller than those of the first openings; a feeding member formed on the rotary drum or the side surface covering member and having a substantially spiral shape for feeding the papermaking
25 raw material passing through the first openings toward the open portion of the side surface covering member; and a water supplying device for supplying water to the papermaking raw material.

11. A method for dissociating a papermaking raw material comprising:

providing the papermaking raw material in a rotary drum disposed horizontally and having engaging portions on an inner surface thereof,

rotating the rotary drum so that the papermaking raw material located at a lower side of the rotary drum engages the engaging portions to be transferred to an upper side of the rotary drum, and falls from the engaging portions,

rotating a rotary vane disposed inside the rotary drum to hit the papermaking raw material falling from the engaging portions so that the papermaking raw material collides with the inner wall of the rotary drum and falls on a bottom of the inner surface of the rotary drum to be dissociated.

12. A method for dissociating a papermaking raw material according to claim 11, wherein the rotary vane is disposed horizontally parallel to the rotary drum, and is rotated faster than the rotary drum.